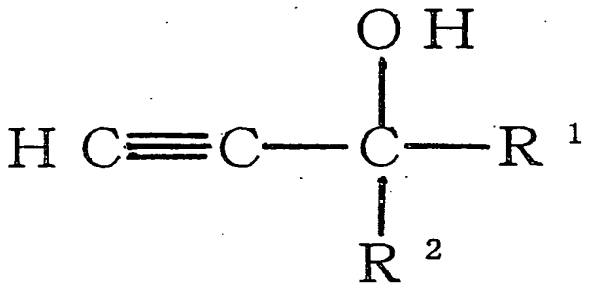
CLAIMS

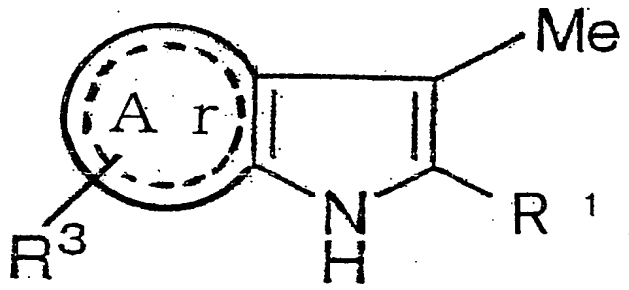
1. A process for producing condensed pyrroles, which comprises allowing an alkyne alcohol represented by formula (4):



(4)

wherein R^1 and R^2 independently represent a hydrogen atom, an alkyl group which may have a substituent group or an aryl group which may have a substituent group, and R^1 and R^2 may be combined to form an alkylene chain, to react with an aromatic primary amine in the presence of a ruthenium complex.

2. The process according to claim 1, wherein the condensed pyrroles are compounds represented by formula (1):

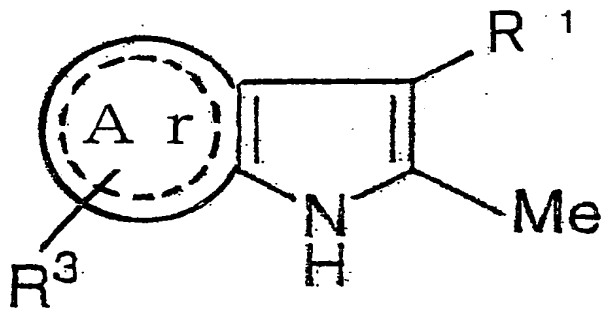


(1)

wherein double-circled Ar represents an aromatic ring, R^1 (or R^2) represents a hydrogen atom, an alkyl group which may have a substituent group or an aryl group which may have a substituent group, and R^3 represents an alkyl group which may have a substituent group, an aryl group, a hydroxy group, an alkoxy group, an amide group, a ketone

group, an ester group or a halogeno group.

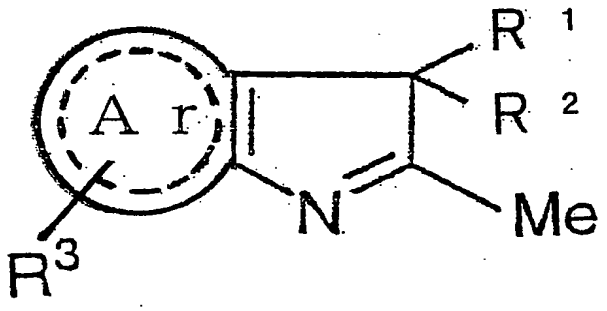
3. The process according to claim 1, wherein the condensed pyrroles are compounds represented by formula (2):



(2)

wherein double-circled Ar represents an aromatic ring, R^1 (or R^2) represents a hydrogen atom, an alkyl group which may have a substituent group or an aryl group which may have a substituent group, and R^3 represents an alkyl group which may have a substituent group, an aryl group, a hydroxy group, an alkoxy group, an amide group, a ketone group, an ester group or a halogeno group.

4. The process according to claim 1, wherein the condensed pyrroles are compounds represented by formula (3):



(3)

wherein double-circled Ar represents an aromatic ring, R^3 represents an alkyl group which may have a substituent group, an aryl group, a hydroxy group, an alkoxy group, an amide group, a ketone group, an ester group or a halogeno group, and R^1 and R^2 have

the same meanings as defined above.

5. The process according to any one of claims 1 to 4, wherein the ruthenium complex is $Ru_3(CO)_{12}$.

6. The process according to claim 5, wherein $Ru_3(CO)_{12}$ is used in an amount of 0.1 to 10 mol-%.

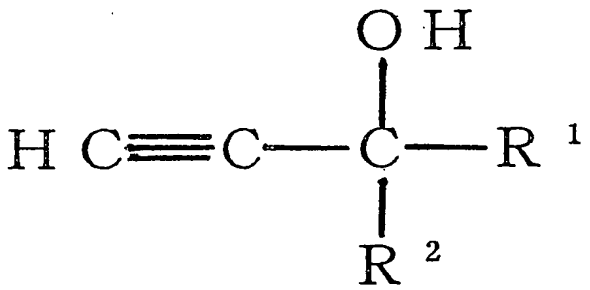
7. The process according to any one of claims 1 to 6, wherein the reaction is conducted in the coexistence of an acid or an ammonium salt thereof.

8. The process according to claim 7, wherein the acid or an ammonium salt thereof is used in an amount of 3 equivalents or more relative to $Ru_3(CO)_{12}$ (1 equivalent or more relative to the ruthenium atom).

9. The process according to claim 7 or 8, wherein the acid or an ammonium salt thereof is a salt consisting of an acid and the aromatic primary amine used in the reaction.

10. The process according to any one of claims 1 to 9, wherein the reaction is conducted under heating at 80 to 200 °C.

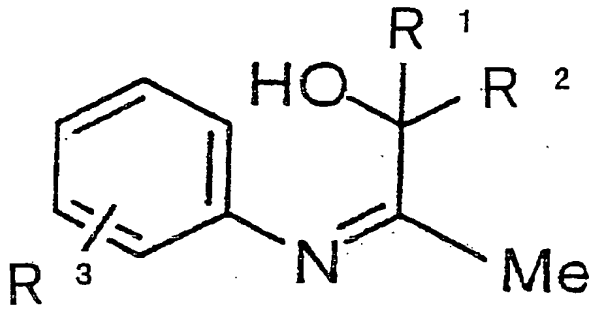
11. The process according to claim 1, which comprises allowing an alkyne alcohol represented by formula (4):



(4)

wherein R^1 and R^2 have the same meanings as defined above, to react with an aromatic primary amine in the presence of a ruthenium salt and in the coexistence of an acid or

an ammonium salt thereof in an amount of 1 to 10 equivalents relative to the ruthenium atom, to form a compound represented by formula (5):



(5)

wherein double-circled Ar, R^1, R^2 and R^3 have the same meanings as defined above, then isolating the compound and adding an additional ruthenium complex and an acid or an ammonium salt thereof to react with the compound, or adding an acid or an ammonium salt thereof to react with the compound without isolation in the same system.